**Bomb Disposal Robot**

**Event:** The Urban Search & Rescue Challenge: Explosive Ordnance Disposal (EOD) enables students to create a mobile robot like those employed by emergency service personnel (fire, police, military). The robot is designed to secure an area by locating, neutralizing, moving, and disposing of explosive materials.

**Challenge Overview:** A team will design, draw and build a robot and arm mechanism. The team will remotely operate the robot, which should be capable of locating, grabbing, and moving ordnances on the challenge course. This remotely operated vehicle (ROV) must traverse the course (autonomous and tele-op), locate the ordnances, secure them, and properly dispose of them. Each team will compete in a time-limited mission to locate and dispose of the ordnances.

**Parts Restrictions**

* Robot must fit into an 16" x 16" x 16" space when starting but may be expanded to a larger size during the challenge.
* Be able to grasp/pick up a 2.5” weighted Styrofoam ball “the Bomb”
* 2 DC Motor Controllers
* 4 DC motors
* 2 servos with no direct connection
* Only Tetrix parts may be used.
* A notebook is required for this assignment

**Robot must be able to**

* Drive in marked playing field/course
* Open and close any door or lid

Ordnance container is 24” H and each compartment is 12”

Ordnance disposal box has a beacon above it - “bomb” must be placed in the box and beacon button must be pressed in order to properly dispose of it

* Lift and remove ordnance
* Place ordnance in disposal area

**Design and Build**: (100 pts)

Robot has the necessary elements and design to suit the challenge.

Robot fits in 16” X 16” X 16” box.

Robot meets the “shake test” parts do not fall off.

Wiring is correct, neatly finished, and secured from catching on gears or other robots.

0 20 40 60 80 100

**DIGITAL Notebook**: (100 pts)

Minimum of 10 entries (2 per week) Including Date, Objective/Task, Image, Outcome/Reflection

Pictures or diagrams for at least half of the entries.

Entries are complete and descriptive for each major phase of the project.

Error free: grammar and spell check used.

Title page: names, period, team #

Conclusion:  include what you learned, what was most difficult (how did you overcome), what was the best aspect of the project for your team?

0 10 20 30 40 50